

Petroleum Finance Company (PFC), an industry consultancy, one big reason is the relentless pressure from shareholders for financial returns. Merger synergies and unit efficiency gains are all very well, he says, but there are limits to how much managers can squeeze out of a merged firm.

With demand for natural gas forecast to grow much faster than that for oil over the next couple of decades, oil bosses are eagerly looking for ways to increase their exposure to gas-related businesses. Upstream, firms that once used to flare off gas as a useless by-product of oil exploration are now looking for ways to get it to market. One reason why BP gobbled up Amoco was to expand its small asset base in gas into a serious force. In power generation and marketing, Shell has a large presence through its joint ownership (with Bechtel, an American construction company) of Interger. Chevron holds a big stake in Dynegy. Before its takeover by Chevron was announced last year, Texaco had contemplated a merger with Duke.

Mr West's firm has looked closely at the world's top energy firms, whether in oil, gas or power, by market capitalisation, and has found that the markets are already rewarding those firms embracing convergence.

All things to all men

Some oil majors have even dabbled in retail provision of electricity. One of them is Shell. Its boss, Mark Moody-Stuart, thinks the future will see three sorts of energy companies: asset managers such as Exxon, energy traders such as Enron, and a hybrid third sort: firms with big assets and market savvy that are not wedded to either approach but will concentrate on serving the customer in the most effective way. As it happens, Mr Moody-Stuart thinks that Shell is well placed to take the third course, which will prepare it for any longer-term shifts in the industry: "We want to meet our customers' needs for energy, even if that means leaving hydrocarbons behind."

The third force shaping the energy business is probably the scariest, as the bosses of California's ailing utilities will tell you: risk. In future, firms will

live or die based on how well they manage the volatility inherent in deregulated markets—including the risks involved in making the transition to such markets. Enron's Mr Skilling puts it this way: "It's absolutely clear that volatility in the energy business is growing because of deregulation. It is irresponsible to shareholders not to hedge those risks."

Some big energy firms already have experience in energy trading, but many others may be overwhelmed. To such folk, Chuck Watson, head of Dynegy, generously offers his services: "It is extremely difficult to manage the risks inherent in deregulation: you need both the expertise and the size. Because I'm trading 10 to 20 billion cubic feet of gas a day all over North America, I can manage any supply/demand dislocations much better than any single customer." Indeed, even big energy firms are increasingly looking to the professionals: Electricité de France now relies on Louis Dreyfus, a French trading company, to help manage risks as Europe's wholesale gas and power markets slowly open to cross-border competition.

But even the most sophisticated energy firms may not be prepared for the biggest risk they face from the rise of market forces: the emergence of a truly disruptive innovation that changes all the rules of the game. As the experience of the past two decades in telecoms and computing has shown, the most powerful effect of deregulating an industry can be to open the door to venture capital, nimble entrepreneurship and technological innovation that allow the previously unimaginable to happen. Even well-run firms that dominate their industry may be knocked sideways by disruptive technologies such as personal computers and cellular telephony, as IBM and AT&T discovered to their cost.

Could that happen in energy too? The better question to ask would be not whether, but when and how. Some crazy-haired visionary may even now be at work on a wondrously efficient, completely clean power plant on wheels that will heat and light your home as well as serving as a sporty car. The industry has already seen some astonishing innovations. Why should there not be many more?



Notes from a banana republic

FOR the better part of a century, governments the world over have been running the power business as a command-and-control monopoly. Even in free-market America, most people have been getting their power from stodgy local utilities unencumbered by competition. This method has its merits: most of the rich world is now wired up. But it conspicuously failed in the developing countries, where over 2 billion people still have no access to electricity. And now, as concerns about the reliability and cleanliness of grid power grow, its limitations are becoming more apparent in the industrial world, too.

That explains why governments are, at long last, beginning to extricate themselves from the energy business. About half of America's states have liberalised their power sectors, and there is now a vibrant trade in wholesale gas and electricity. The

European Union, too, is deregulating its wholesale gas and electricity markets, and even in the developing world deregulation and privatisation are gaining momentum. As market forces take hold, they promise a blossoming of competition, investment and innovation.

Nowhere is that promise greater than in California. It is a huge and wealthy market with a long history of progressive politics that is responsive to the demands of its people. That explains why California led the United States in liberalising its power markets in 1996. Yet far from enjoying the promised benefits of lower prices, increased reliability and cleaner energy, the state finds itself in a mess over electricity. Its two largest utilities have racked up debts of well over \$10 billion in recent months, and are, in effect, bankrupt. Customers have been asked to pay more at the same time as having to endure

Energy markets are at last being liberalised. It is not proving easy